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Science is - as we all know - The un-
covering of facts in Nature -

As Nature discloses
her truths to us, she opens the doors
of understanding and reason!

Those things which are looked upon as
unreal - supernatural - are - one by
one - proving to be the results of natural
causes - all part and parcel of this
world and its products, the most-
advanced "unreal" fact being the
telegraph without wires. -

On reflection these
things bring us face to face with the
greatest result of all progress, the
end of superstition.

A great Theologian once said to a
great Agnostic "If you do not believe
in a hereafter you would rob me of
our immortality. "If it is a fact, I
credit it," he replied. -

And so if unseen
facts in nature ^{shall} become real,
there is no longer reason for superstition
to exist. If death will be as natural as

(Go to next page first)

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Radium is ~~confined~~^{kept} in a tube of glass
- one of quartz - one of metal - one of
rubber and one of gutta serena, all in
order to confine its powers, & to preserve
its quantity, but science reckoned wrong,
nothing could confine its ^{power}, nothing
could diminish ~~its power~~ its quantity.

In order to see Radium the only
tubes are taken off & one ~~look at it~~
~~is confined~~^{mixed} = ~~with other~~ = ~~the~~
there, a little square of transparent-
quartz which is inserted in the
tube just over the spot where the
Radium is confined. = ~~either~~^{both} ends
of the tube are protected with rubber,
in order to minimize ^{as much as possible} the danger
of handling it. -

It cannot be seen at all,
until you have been in a very
dark place for some 10 minutes -
& then - even before it is uncovered, if
there are ^{in the room} diamonds, ~~they~~ will become brilliantly illuminated.
But imitation stones will not be affected, at all.

As I say Pitchblende consists of Uranium
Lead, Iron, Barium, Calcium, etc.
and there are in this Pitchblende Traces, so
very minute ^{they are called} elements, and Radium is
about one 16th hundredth part of these traces. To
obtain this minute part is to first extract
the Uranium, which forms over 80th percent of the
100th part, & the remaining 20 percent of
Lead, Iron, Barium calcium & traces etc
(~~which is sometimes missing~~) They fuse with
Carbonate of soda, dissolve in Hydrochloric acid.
Precipitate the lead and other metals by
the aid of Sulphurated Hydrogen. This
treatment removes the metals & lead.
What remain are the Chlorides of Polonium
Actinium ^{Radium} ~~Actinium~~ ^{Radio active matter} ~~Actinium~~ ^{Radium} etc. ~~the~~
The earliest crystals ^{discovered} removed are Radium.
The others, Polonium Actinium etc are infinitely more rare.

Pitchblende, after having been treated for
the extraction of Uranium, is called refuse
or Residue. It looks like a reddish &
lumpy powder. In the reduction
of this powder ^{which} Madame Curie ~~the~~
found ^{the} traces of ~~the~~ Radium &
other substances infinitely more rare
than Radium. ^{Polonium, Actinium, etc.} But they do not
make Radium the less rare. (9 to 10647)

In 8 tons of this residue was found one
 gramme of Radium - not wholly pure at-
 that & ^{the nature of the substance} the others, in such infinitesimal
 quantities that man cannot conceive them.
 For instance one 15-hundredth part of a grain
 of Polonium was found in 2 tons of residue.
 remember this refuse had already had ex-
 tracted from it over 80 percent, so, add to
 these 2 tons of residue, the 80th part, one
 can soon calculate that these two tons
 represented but 20 percent of the material in its
^{original state} ~~used~~. So one can see that tons and
 tons upon tons are required to be
 worked upon & reduced to nothing ^{in order} to
 be able to find these wonderful & little
 microscopical - grains of sand as it were, all
^{this} ~~and~~ ^{to this} ~~indicates~~ very plainly the vastness of
 the time & ^{the amount of} patience required in the work.

The first quality or extraordinary
 phenomena observed was:

The first Radium procured by Madame
 Curie, she placed in a glass tube
~~has~~ left it standing in a small
 measuring glass over night. The

next morning the glass ^{has changed 7} ~~had~~ ~~was~~
^{in colour} to a deep violet ~~in colour~~, — The
tube containing the Radium was not
affected! Here comes Page 5 X (Turn back)

The Curis soon found they were in possession of something unsearchable.

Something which had to do with those forces hitherto unknown ~~to~~ ^{as} material, — here was something that began to give ~~us~~ proof of things.

Radium began to open up the laws of the Universe and show ~~us~~ things that science had never been able to explain. It ~~showed~~ ^{shows} ~~that~~ ^{some} that science had based its ~~calculations~~ ^{at least} on theories altogether wrong. — It has shown us the disintegration of the atom, — a fact which changes man's entire conception of matter and force & ~~perhaps~~ ^{perhaps} gravitation. Its existence, its manner of force is in direct opposition ~~to~~ the law of cause and effect. — Its power of light, lightning, ^{up things} its power of heating, of burning, all are ~~not~~ in contrary to ~~accordance~~ with nature's laws as we know them. =

In the light, Radium resembles a tiny bit of table salt, In the dark

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it looks like a bit of old decaying fish
Its light is a dead phosphorescence - half
transparent, as a fable light-might-look
behind a ground glass. - There are no
visible rays.

No one on seeing it would dream ^{for a moment} of the
power of this insignificant - 10 or 12
inch tube with its little phosphorescent
light.

But it is always, always
illuminated, that is one of its marvels!
from where does it get its light - &
from what? No body knows,

It produces heat, from where?
from what? No body knows, then
^{evidence} ~~there~~ is contrary to the law of cause
& effect. Science is baffled. -

ah, facts ^{frequently} want explanation frequently
to be facts, Indeed how seldom
facts are facts without explanation.

On reflection This reminds us
of how - in the ordinary things
of life, we often explain our attitudes

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by saying "I didn't know" & how
very often we change our opinion of a
case when it is explained to us! altho'
the fact itself may have had nothing
to do with it. - Alas, how often we have
to unlearn those things we have learned

And science is no exception to this rule.

Radium that magic word Radium. But
what magic? Let us first understand
in what way we mean to use the word.
Magic, magic is a mystery & we call
a thing a mystery because we do
not understand it. There are two
magics, and many mysteries which
are not magical. But I wish to refer
~~to those~~ now to those ^{which} ~~that~~ come under
the head of magic.

There are two kinds
of magics, I say magics in order
to simplify what I mean.

One kind is created by man
things which are magical or mysterious to
every body but himself, because to him

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They are simple results due to natural causes ~~only~~ manipulated by him.

Then there are nature's magics, called magics because no man understands them - As soon as their causes are known to ~~man~~ they are no longer mysteries, no longer magics. They are natural results of natural causes.

Radium is one of these nature's magics because as yet no one understands no one can explain its-being, its-cause of being nor its-results of being. But the proof remains: that It has revealed facts in nature, hitherto unknown & undreamed of. = No explanation can undo this. =

What is Radium. A question very easy to ask, and I may say is just as easy to answer, I do not know. When it comes to be better known, there will be less reason to talk about it.

for me

It is natural, to discuss most those things we know the least about. Because each one by making known ^{his} ~~their~~ ^{his} views ~~their~~ opinions ~~his~~ ^{his} ~~their~~ discoveries and observations, starts & pushes along a snow ball in thought, which gathers force & material as it goes, till ^{apparently} research & comprehension are rewarded, the results are placed on record, and man takes up something else upon which to concentrate ^{his} ~~the~~ forces, his intelligence. Knowing that

Today

structural
built up
will
undo
tomorrow,
but
this
is
nature
very
means
of
educating
in the
development
of man's
reason.

It is in this spirit - I am talking to you of the very few things I have heard seen - observed & think about Radium.

If all the Analytical Chemists who have treated Pitch Blend for Uranium & thrown the residue away, could get it back again, we ^{might} ~~could~~ soon have enough Radium to experiment with, & learn more about it. But who knows perhaps Nature is wise in revealing it to us slowly, Perhaps it is well that Pitch Blend does not abound everywhere. =

One day ^a scientist in Paris had occasion to experiment with an electric machine which lifted into the air & held ~~them~~ ^{them} up horizontally ^{there} two large brass needles or arms.

As the professor approached the machine the needles fell powerless.

When he receded they flew up again, —

It was ^{some} a long time before he ~~found~~ ^{realized} it was the Radium which he held in his ~~power~~ ^{hand}, It had traversed its many tubes, & annihilated electric mass through space, & it was not as big as the head of a pin.

Nothing could confine the Radium,

✓ The next thing was for science to obtain more of it. ~~For it was~~ ~~what existed~~ ^{what existed} would soon throw itself or its force all away, — but month after month passed ~~on~~ then year after year, & this tiny bit of force remained the same, the same tests were followed by the same results, no wack, another opposition to our known laws,

to

This started science, calculating & figuring on its actual minute-loss or use of force, & I think I remember rightly when I saw that Mrs Curie is said to have calculated mathematically that Radium would lose ^{one} half of itself - half of its force in 1700 years. - Of course larger quantities might give a different proposition to science. - Polonium ~~was~~ that sister element ~~was~~ far more rare ~~in the~~ contrary is said to disappear I think completely in 40 days. = I have been told this. But I cannot recall whether it was by Madame Curie herself or not. =

Let us dwell on the heat in Radium for a moment - — A French scientist held ~~the~~ the radium tube to his wrist for an ^{instant} ~~moment~~ - He ceased, he felt nothing. - a long time afterwards a red spot appeared & it got worse - The doctors could neither diagnose or cure it. = ~~the patient died~~ ~~the patient died~~ ^{he} The radium ^{heat} burned without burning. Another law defied!

~~What~~

without ^{the} removal of its coverings
or tubes Radium - in the dark
throws itself - or its power -
out through space and
makes every thing luminous
around it.

If you approach the eye with the
Radium (still in all its tubes)
for a part of an instant
only, the eye will be filled
with a light so powerful, it
is as if you had been looking
at the sun, only it remains
much longer. Yet the eye would
^{have seen} no light, ~~for~~ the Radium
~~had not~~ ^{being} been uncovered.
(I mean ~~uncovered~~ up to this
point.)

without reasoning, its course & tube

In the dark (in its power)

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✓ Radium throws out through space
& makes every thing luminous around
it. ~~without uncovering it. destroying~~
~~any of its many covering & tubes.~~

If you approach, the ~~radiation~~
^{of Radium} ~~all closed up~~ - ~~by your~~
~~eye~~ for a part of an instant
only. ~~It must give the eye, which a~~
~~light as powerful, that it is, &~~
~~if one has been looking at the~~
~~sun, yet the eye saw no light.~~

This is opposed to the law that
the eye ~~must be exposed~~ ^{like the} photograph
plate must be exposed in order to
receive an impression. = Light must
pass thro' the eyelid, but in the
case of the Radium all was ~~absolute~~
absolute darkness. ~~the necessary~~ ^{the apparent}

not safe to try this. -
This ~~evidence~~ ^{evidence} is a ~~proof~~ ^{proof} against the law
of cause & effect as taught by science.

I ask my self, How is it that the radium did not decay, burn or illumine - its own tube coverings!
I will ask this when I get an opportunity.

Radium will pass through ^{the finest} glass blown ~~and~~ ~~that it is possible to~~ and under luminous phosphorescent crystals confined in a vacuum.

If Radium and its sister elements can bring to our vision those things which we cannot see, as it does the atoms, its influence & importance in the world of progress cannot be measured. Indeed its wonders are already ~~as~~ beyond our calculations or ^{our} understanding. & the words "I'll believe when I see" are of no longer any value. Their argument is ~~fast~~ ^{weak}, for now we know that the ^{naked} eye can see almost nothing at all. Mathematicians & science will have to find another phrase, & faith may become a fact.

Radium Verus Electricity

Radium is a soft light - without rays
 Electricity is a hard light - with rays
 Radium is a Uniform Steady light -
 Electricity is a Vibrating Unsteady light -
 Radium is a Permeating light -
 Electricity is a Penetrating light -
 Radium is a light - that never goes out -
 Electricity is a light - that always goes out -
 Radium is a light - that depends on nobody, knows ^{what} -
 Electricity is a light - that depends on every body, knows ^{what} -
 Electricity is a great power
 Radium is a greater power
 Electricity is produced by building up something
 Radium is produced by unbuilding every thing,
 Electricity must be applied for effect
 Radium must not be applied at all
 Electricity - is visible to the eye as a light -
 Radium ~~is~~ a light is the reverse. =

If sufficient quantities of Radium could
 be found & used for lighting purposes
 it ~~is~~ ^{might} revolutionize ~~completely~~ ^{our}
 ideas & manner of using light - and our
 very manner of living ^{might} change -
 Phosphorescent light is so marvellous.

Through the medium of Radio active matter
we are learning - I repeat - that those
laws ~~now~~ based on theory & past-
knowledge which could never be ex-
plained are most of them wrong! -

— The theory (only theory) — but called
law of the atom is laid down,
by ~~Bohr~~ ~~a~~ ~~Bohr~~ ~~Bohr~~
to ~~be~~ ~~the~~ ~~same~~ —

the theory (only theory) but called law
of gravitation — is a question
~~is it a law of nature?~~

The theory (only theory) but called law
of cause & effect - is defied.

of Cause & Effect - is defined.
~~What is the cause of the effect?~~
~~The effect is only the result of the cause.~~
~~is the effect of the cause?~~
~~is the effect of the cause?~~
~~is the effect of the cause?~~

~~Should the property
the law of things as things
be called law of light &
light. That in law
is also defined.~~

and the theory - only theory - but called
the law of the inviolable or ^{is questioned for}
~~seeing unsearchable things~~

~~Every thing may be visible &~~

Radium the smallest
thing in the world has ~~done~~
done all this!

And now,

Prof. Crookes the ^{Eminent} English
Scientist has discovered something
through the use of Radium of very
great interest & of still greater importance
~~to mankind~~, He has found that
Radium can so illuminate
certain ^{substances} ~~substances~~, that with the aid of
a magnifying glass ~~one can see~~
~~the atoms of the substance~~

It can be seen that Atoms are
in reality not atoms at all, but

~~substances~~ ~~being transformed~~
~~into energy~~ ~~by the action of~~
~~the Radium~~

Intense - Concentrated ^{Energy} ~~substance~~
material, shooting, darting, agitated, substance declaring itself
as force a force

Madame Curie has made the count
of this Energy or force & her
Calculation is said to be
2000 Kilowatts per second
(and this would whirl through
space but 1000 miles an hour)

It is strange how man can
make mathematical calculations
which are far far beyond his
comprehension, a fact which
might suggest that comprehension
& brain are two distinctly things.

But was it not marvelous for
science to discern the atom?
With 3000 000 together the eye could not
see them.

~~Some make the current $\frac{1}{10}$ of this~~
 Curie ~~and make the energy or force~~
~~for calculating $\frac{1}{10}$ of this~~
~~24000 Kilojoules per second~~
~~the second~~

(And the world whirls through space at the rate of 1000 miles an hour). It is strange how men can make ^{mathematical calculations of things} which are far far beyond his comprehension. ^{in fact which}

This disintegration of the Atom can be better understood perhaps, when we reflect that it is said 3000,000 ^{atoms} can lay side by side in one molecule of the air, and in turn each atom is itself bursting into millions of parts. ^{These parts} are called Electrons & are no longer material as science knows it.

Without Radium, science of today would ~~be~~ know no more than science of the past - that the Atom was not the smallest thing in the world. Until now there was no way on earth to know it. =

would suggest that ~~the~~ ^{these} ~~things~~ ^{are the different things}

When we reflect on the
smallness of the atom it
might occur to us that we
had to learn to conceive ~~it~~
before such a daring thing
could be shown or ^{reached}
to us as an atom breaking & this
into 3000,000 parts. ^{is what we see in}
Prof Crookes
Spectrometer.

Perpetual motion of every thing,
 from the planet to the atom
 from the atom to the Electrons
 (or our best knowledge ^{through radium} of matter!)
~~is the force~~, - ^{suggesting} ~~to be~~

& suggests
 1 that the ~~central~~ law of gravitation is
 best apt to be holding us on the
 earth than the simple movement
 of whirling through space. Just
 as water is held in a bowl
 if the bowl is whirled around
 fast enough. = 1 A falling
 apple by that same movement
 might ~~be~~ be drawn to the earth, -
 who knows.

As the spectroscope of Prof Crooke
 gives evidence that matter is only force!
~~is what~~ ^{is matter} ~~are~~ there are not two
 things, there is only one - Force. -
 To be understood - one word -
Matterforce.

I would like to say that I am
 well aware ~~that~~ no scientist
 will make any assertion with
 regard to a new discovery (no
~~that is not a scientific process~~
 matter what he may believe),
 until he can produce proofs ~~for~~
 if he should be found in
 an error he would ~~be~~

come to be an authority - one
 so & so. But the fact that
 he follows ~~the~~ given line, shows
 that he is thinking about
 something he does not yet

^{of which he will not speak}
 know & I often feel it would
 be worth much to know ^{the reasoning}
 their impressions, their hopes
 and beliefs ^{of a scientist} ~~not~~ being ~~a~~
^{scientific authority} ~~authority~~ ^{myself} I

feel at liberty - to ^{say} what I
 think, ^{what I mean} & feel, about a thing, if
 my reason suggests it. =

But Radin & the Spenther
 speak plainer than any theories
 I can see done. ~~They~~ ^{He} declare facts!

we women should be proud that it was
 through one of our own sex that these
 wonderful findings of Prof Crooks
 were possible. ~~of course~~
~~these findings were possible~~

The law of Miracles is opening up to us.
 in the invisible, — as it has ~~been~~
 for years been doing in the visible
 world. —

Now in passing all the
 beautiful & wondrous things
 produced today we stop to think
 that every possible thing no matter
 what, ~~is~~ ^{comes} from ~~nature~~ ^{the} Nature,
 — the softest ~~light~~ ^{forms}, the finest ~~leaves~~ ^{moths},
~~flowers~~ — all the divine colours
 are ~~the~~ products ^{made} of ~~the earth under~~
~~our feet~~ ^{made} by the brain
 of man, from the things around
 him and the earth ~~under his feet~~.

~~miracles~~ — We all know this,
 but we don't think about it!

Every when we look on miracles,
 miracles; which are no longer miracles
 except to the savage, ~~the~~
~~from~~ from the farthest ends of the
 earth, and we look upon them

but pity ~~for~~ ~~his~~ for his
 ignorance & misunderstanding. ~~Forgetting~~
~~that we are all ignorant & we all have~~
 that we are all ignorant ^{that} we all have
 misunderstanding — ~~something~~ !!

The difference is we know his
 of what he is ignorant
 & we are none of us
 aware of our own,
